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## **Chapter 2 Alternatives Including the Proposed Action**

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## Description of Proposed Action

Natural gas is available near Roseburg from Williams Gas Pipeline - West, formerly Northwest Pipeline Company. The Williams pipeline system transports gas from producing wells in the Rocky Mountain region of the U.S. and Canada. The natural gas produced from the wells is stripped of corrosive elements, excess water and heavier hydrocarbons before entering the pipeline system. The natural gas is delivered via pipelines from these wells to Portland and the Willamette Valley. The Williams Grants Pass lateral extends south of Eugene, generally along Interstate-5, to Grants Pass.

In the Roseburg area, Williams has a single 10-inch steel pipeline operating at 500 to 800 pounds per square-inch (psi). The proposed action would be a 12-inch steel pipeline connecting to the existing 10-inch pipeline a few miles south of Roseburg.

The pipeline would be buried for its entire length. Its only above-ground components would be line markers, test stations, several bridge crossings and valve settings. It would be built and hydrostatically tested to 1,500 psi which allows a Maximum Allowable Operating Pressure (MAOP) of 1,000 psi. It would operate at the same pressure as the Williams pipeline, which is normally 500 to 800 psi.

As noted in Chapter 1, approximately 3 miles of the preferred pipeline route would cross BLM-managed lands within the BPA power line right-of-way. The remainder of the pipeline would be located within the rights-of-way of the CBW Road and other public roads, or within PP&L and BPA rights-of-way crossing privately owned properties.

The pipeline would terminate at Ocean Boulevard in Coos Bay where a NW Natural distribution system would be built. NW Natural has been granted the “exclusive territory” rights for gas distribution in Coos County, excluding the city of Bandon.

The straight-line distance from the Williams connection location (just south of Roseburg) to Ocean Boulevard is about 44 miles, whereas, the proposed action traverses approximately 60 miles. The proposed action within existing road and utility corridors is the shortest practical route from source to destination.

The permanent easement on BLM-managed lands would total approximately 14 acres. Additional temporary utility corridor construction right-of-way width (as necessary) is also requested. The additional utility corridor construction area of approximately 7 acres would also be completely inside the BPA utility corridor and returned to BLM control after completion of construction and site restoration.

Several delivery stations would deliver gas to end users at various locations in Coos County and Douglas County. None of these delivery stations would be located on BLM-managed lands. For safety reasons, the proposed action includes 5 block valves (see Appendix J), placed at intervals along the pipeline corridor. Placement of the valves is based upon pipeline safety regulations and operational factors, such as local distribution and lateral pipeline placement. None of these block valves would be installed on BLM-managed lands.

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## Location of the Proposed Action

The corridor for the proposed action would traverse the Coast Range in Southern Oregon from the Western region of Douglas County Township 27 South, Range 6 West, Section 33 (T27S, R6W, Sec. 33) to the Western region of Coos County (T25S, R13W, Sec. 27). The terrain varies from gentle to very steep as the corridor follows 230 kilovolt (kV) transmission lines operated by BPA and PP&L, the CBW Road, and BPA and PP&L 115 kV transmission lines and roads into Coos Bay. (See map following this page).

The proposed action would connect to the Williams Gas Pipeline near Happy Valley, approximately 4 miles southwest of I-5 freeway exit 124 (Harvard Avenue) in Roseburg. The pipeline route continues - as described below - until it connects to its delivery facility at Ocean Boulevard.

The following is a sequential list (east to west) of section locations which contain a portion of the proposed action:

### Douglas County

T27S, R6W, Sections 33, 32 and 31;  
T27S, R7W, Sections 36, 35, 34, 33, 32 and 31;  
T271/2S, R7W, Section 6;  
T28S, R7W, Section 6;  
T28S, R7 1/2W, Section 6;  
T28S, R8W, Sections 1, 2, 11, 14, 15, 16, 17, 18 and 7.

### Coos County

T28S, R9W, Sections 12, 13, 14, 11, 10, 9, 8 and 7;  
T28S, R10W, Sections 12, 11, 10, 9, 8, 5 and 6;  
T28S, R11W, Sections 12, 11, 10, 3 and 4;  
T27S, R11W, Sections 33, 32, 29, 30 and 19;  
T27S, R12W, Sections 24, 23, 14, 15, 16, 9, 10 and 4;  
T26S, R12W, Sections 33, 32, 29, 30 and 19;  
T26S, R13W, Sections 25, 24, 23, 14, 15, 10 and 3;  
T25S, R13W, Sections 34 and 27.

### Description of the Proposed Action Corridor

The proposed action corridor is delineated into Segments A through K (Table 1). These segments aid discussion of the proposed action by breaking it into manageable portions.

**Table 1: Proposed Action Segment Description**

Segment	Begins	Ends	Distance in Miles
<b>A</b>	Williams Delivery Station, approximately 4 miles south- west of Roseburg, OR. (T27S, R6W, Sec.33)	BPA Reston Substation (T27S, R7W, Sec.31)	8.1
<b>B</b>	BPA Reston Substation (T27S, R7W, Sec.31)	Tenmile Block Valve CBW Road Mile Point 1.7 (T28S, R8W, Sec.16)	5.7
<b>C</b>	Tenmile Block Valve (T28S, R8W, Sec.16)	Douglas-Coos County Line Douglas County Mile Point 6.0 (T28S, R9W, Sec.12)	2.8
<b>D</b>	County Line Coos County Mile Point 36.3 (T28S, R9W, Sec.12)	Lone Pine Lane CBW Road Mile Point 17.5 (T28S, R11W, Sec.10)	18.3
<b>E</b>	Lone Pine Lane (T28S, R11W, Sec.10)	Cherry Creek CBW Road Mile Point 17.9 (T28S, R11W, Sec.4)	1.6
<b>F</b>	Cherry Creek (T28S, R11W, Sec.4)	McKinley, OR CBW Road Mile Point 17.1 (T27S, R11W, Sec.32)	0.9
<b>G</b>	McKinley, OR (T27S, R11W, Sec.32)	Fairview, OR CBW Road Mile Point 12.5 (T27S, R12W, Sec.24)	3.6
<b>H</b>	Fairview, OR (T27S, R12W, Sec.24)	Sumner Lane at PP&L CBW Road Mile Point 2.7 (T26S, R12W, Sec.30)	9.9
<b>I</b>	Sumner Lane (T26S, R12W, Sec.30)	U.S. 101 CBW Road Mile Point 0.0 (T26S, R13W, Sec.23)	2.4
<b>J</b>	U.S. 101 (T26S, R13W, Sec.23)	Red Dike Road CR 183 (T26S, R13W, Sec.10)	2.7
<b>K</b>	Red Dike Road (T26S, R13W, Sec.10)	Coos Bay, OR Off Ocean Blvd. (T25S, 13W, Sec.27)	3.1

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## Pipeline Laterals

The Coos County 12-inch mainline would extend to the edge of the city of Coos Bay. The Coos County project would also include smaller pipeline laterals to serve Coquille, Myrtle Point and Bandon.

These lateral pipelines would be smaller in diameter than the 12-inch mainline. The projected demand in the smaller towns could be served with 6-inch and 4-inch pipelines. The laterals would be built with welded and coated steel pipe, to the same 1,000 pounds per square inch (psi) MAOP and Department of Transportation (DOT) standards as the mainline. The laterals would be operated at the same pressure as the mainline.

The routes of these lateral pipelines are not yet finalized. The pipelines would generally follow existing road, power and other rights-of-way. There is no route being considered that would impact BLM or other Federal lands (see map following this page).

## Lateral Routes

The most likely lateral pipeline route would follow BPA to Bandon, OR, using the railroad grade to Coquille, OR, and Myrtle Point, OR.

### Fairview to Hwy 42

Present plans would have the lateral begin at the Fairview block valve (Segment G). The lateral pipeline would likely leave the site of the block valve along an old railroad grade and follow Fairview Road (County Road [CR] 9 from Coquille) for approximately 1.6 miles.

At about 1.6 miles from the Fairview block valve, the lateral route would likely follow the BPA Fairview-Rogue 230 kV powerline utility corridor. This route heads southwest over the ridge at Rink Peak at 1,070 feet above sea level. The BPA corridor descends into the Coquille River valley, crossing Hwy 42 at Mile Marker (MM) 14.4. The pipeline lateral would be bored-under Hwy 42 and would follow an old Southern Pacific Railroad right-of-way adjacent to the highway corridor. Near the BPA crossing of the railroad grade, a block valve would be at the end of this 7.5-mile lateral segment. This segment would cross Lee Valley Road (CR 2B) and Hwy 42, Steele Creek, Blair Creek, Lost Creek and Aiken Creek in the Coquille watershed. This segment would be built of 6-inch or 8-inch diameter pipe.

### Coquille Lateral

This lateral would likely start at the Hwy 42 block valve and travel north, following a former railroad right-of-way. The railroad from Coos Bay to Coquille still has limited traffic, but is currently under abandonment discussion. The lateral route would be in or beside the railroad grade, subject to agreement with the railroad. If such an agreement is not made, the pipeline would be installed on highway rights-of-way or on private land between the two corridors. The Coquille Lateral would then follow rail or road corridors to the south edge of Coquille. This segment would be built of 4-inch diameter pipe and approximately 2 miles long.

### Myrtle Point Lateral

This lateral would likely start at the Hwy 42 block valve and travel south along a former railroad right-of-way. The anticipated route would be in the railroad right-of-way, highway or on private land. The Myrtle Point Lateral would end at the north edge of Myrtle Point near Hwy 42. This segment would cross 4 county roads. The North Fork of the Coquille River would be directionally-drilled. This segment would be built of 4-inch diameter pipe and approximately 6 miles long.

### Bandon Lateral

This lateral would likely start at the Hwy 42 block valve and travel west, following the BPA right-of-way to the east edge of Bandon. The pipeline would be directionally-drilled under the Coquille River near river mile 27. This route would follow BPA Rogue 230 kV line to Fat Elk Road. Near Rollan Creek, the BPA Rogue corridor converges with the BPA Number 1 Fairview-Bandon 115 kV line. The lateral would then follow a county road for a short distance. At Lampa Creek, the pipeline would follow county and/or forest roads for easier negotiation of creek crossings and elevation changes.

This segment would cross 8 county roads. The Coquille River would be directionally-drilled. The anticipated route would cross approximately 12 named perennial streams and numerous unnamed perennial and intermittent streams. The segment would be built of 4-inch diameter pipe and approximately 12 miles long.

### **Schedule, Sizing and Route Selection Factors**

The Coos County 12-inch mainline is scheduled for completion into Coos Bay by the end of 2002. The smaller pipeline laterals are anticipated to be finished by the end of 2003. There are several factors, including the size of lateral pipelines and selection of the lateral routes, which are not yet confirmed.

Gas distribution to Bandon is also an unknown factor. NW Natural has been authorized by the OPUC to serve all parts of Coos County with natural gas, except within the city limits of Bandon. Bandon has not yet decided whether to build its own gas distribution system, allow NW Natural a franchise, or prohibit natural gas and protect its existing electric power. The town may also wish to install or contract for a natural gas-fired generator to provide electricity. These unknown factors could result in: 1) a 4-inch lateral constructed as envisioned now; 2) a larger lateral for greater power generation; 3) no lateral if gas distribution is not permitted; or 4) a re-route of the pipeline to accommodate a generator adjacent to the Bandon area.

The Beaver Hill area presents more unknown factors. Coos County operates a solid waste disposal plant near Beaver Hill in Section 24-T27S-R14W near U.S. 101 between Coos Bay and Bandon. This site is close to a PP&L utility corridor, has suitable zoning and could be a potential power generation site. Pipeline access to Beaver Hill would be feasible from Fairview via Coquille or along U.S. 101 from Coos City.

No proposals have been made to Coos County. None of the likely routes to Coquille, Myrtle Point, Bandon or Beaver Hill involve BLM-managed lands. At this point in the planning process for these laterals, it is premature to formulate a detailed assessment on any of the possible lateral routes. Without BLM involvement, the U.S. Army Corps of Engineers would become the lead Federal agency for any lateral-building projects.

### **NW Natural Gas Facilities**

NW Natural plans to install three types of gas mains:

- Welded steel main lines capable of intermediate to mainline pressure (up to 1,000 psi);
- Polyethylene (PE) main lines at 60 psi or less (4-inch to 8-inch diameter);
- PE pipes down side streets at 60 psi or less (2-inch diameter).

NW Natural plans to extend service to industrial users on the North Spit. This service would likely be an 8-inch to 12-inch diameter welded steel pipeline. Tentative plans for this line would follow Ocean Boulevard and Newmark Avenue to Empire, serving as the primary source for the Coos Bay to North Bend distribution system.

The North Spit extension would be built within 4 years of completion of the proposed action. The extension would be directionally-drilled under Coos Bay and placed within the Trans Pacific Parkway to Weyerhaeuser. Directionally-drilling under Coos Bay would require a permit from the U.S. Army Corps of Engineers. This extension will be subject to NEPA when plans are finalized. The bay crossing has been discussed as a joint venture with the local water board to upgrade water service on the North Spit.

While the main lines can be used to directly serve larger users, most customers would be serviced by a 2-inch PE main line connecting in their street or alley where a plastic tapping tee is fused onto the main line and a 1-inch diameter PE service pipe is run through the yard to a meter at a house or building. Each customer would have a separate service line and meter.

Utility distribution mains are installed in public streets, utility easements and other existing rights-of-way. Mains must be installed with 18 to 36 inches of cover in public corridors depending on pressure rating and location. Construction of mains would be entirely in existing streets, alleys and public utility easements (PUE). Crossings of streams and wetlands usually occur in the roadway or on bridges with no impact to the off-road areas. NW Natural is certified by the OPUC to install gas distribution systems and serve all parts of Coos County with natural gas, except within the city limits of Bandon.

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## Pipeline Construction Alternatives Summary

**Table 2: Action Alternatives Route Summary**

	<b><u>Proposed</u></b>	<b><u>Alt. 42</u></b>
<b>Total length (miles)</b>	59.1	82.7
<b>Total Number of Streams Crossed</b>	188	209
<b>Total Number of Large Streams Crossed</b> (streams 30+ feet summer wetted width)	2	18
<b>Total Number of Medium Streams Crossed</b> (streams 15 to 30 feet summer wetted width)	6	12
<b>Total Number of Small Streams Crossed</b> (streams less than 15 feet summer wetted width)	180	179
<b>Total Number of Wetlands</b>	1	9
<b>Adjacent Floodplain (miles)</b>	2.2	15.3

## Proposed Action - Utility Corridors and the CBW Road

This alternative builds a pipeline along or near the CBW Road, as described in Table 3 below.

**Table 3: Route Summary for Proposed Action**

Segment	Description	ROW Type	Distance
A	Williams to Reston Substation	PP&L	8.1 miles
B	Reston to Tenmile	BPA	5.7 miles
C	Tenmile to County Line	BPA	2.8 miles
D	County Line to Lone Pine Lane	CBWR	18.3 miles
E	Lone Pine Lane to Cherry Creek	BPA	1.6 miles
F	Cherry Creek to McKinley	CBWR	0.9-mile
G	McKinley to Fairview	BPA	3.6 miles
H	Fairview to Sumner Lane	CBWR	9.9 miles
I	Sumner Lane to U.S. Highway 101	CBWR	2.4 miles
J	U.S. Highway 101 to Libby	BPA	2.7 miles
K	Libby to Coos Bay	BPA	3.1 miles
<b>Total Length</b>			<b>59.1 miles</b>

Pipeline placement, except for certain bridges, would be entirely underground within existing roads and utility (powerline) corridors. Along the utility rights-of-way, the pipeline would be placed near the edge away from trees. The CBW Road would receive full-width repaving where the pipeline is installed under the present asphalt road surface. In addition, the gravel-surfaced road sections will be paved after construction of the pipeline. This includes 10.6 miles of Sitkum Lane east of Sitkum to the county line and 4.5 miles of Sumner Lane north of Fairview.

The proposed action is adjacent to some BLM-managed critical habitat wildlife areas. The proposed action also includes some difficult construction areas, including narrow canyon road beds and steep slopes along the utility corridors. The proposed action contains 188 stream crossings and 1 wetland crossing. Of the streams crossed, 180 are small streams (less than 0.2 cubic feet per second [cfs] of summer waterflow). The total length of 100-year floodplains adjacent to the proposed action is 2.2 miles. The CBW Road and utility corridors rights-of-way would return to their current condition within 1 or 2 years.

Construction equipment would include bulldozers, backhoes, side-booms and other standard equipment typically used for pipeline construction. For the CBW Road segments, construction equipment would also include the typical road paving equipment necessary for full-width asphalt paving.

Operation and maintenance of the pipeline would be in accordance with all Federal, State and local regulations. (See Appendix J for Construction, Operation and Maintenance). Delivery of natural gas to the franchise holder (NW Natural) would generate revenue for the County, which would be applied toward the County's expenses to operate the pipeline. NW Natural anticipates to initially deliver 2 billion cubic feet of natural gas per year to customers in Coos County. The maximum potential throughput of the Coos Pipeline would be 25 billion cubic feet per year.



## No Action Alternative

For the purposes of this EIS, the “No Action Alternative” is defined as the condition in which BLM would not grant Coos County a discretionary Right-of-Way permit for construction, operation and maintenance of a natural gas pipeline on lands administered by the BLM. Affects addressed in the EIS associated with the No Action Alternative assume that the present conditions remain as they currently exist; that is, the pipeline would not be constructed.

However, if the Proposed Action as described in the EIS is denied, Coos County will proceed with plans to construct, operate and maintain the natural gas pipeline within public roads and private easements included in the Proposed Action. Federal land would be avoided, so a right-of-way permit for crossing federal lands would not be necessary.

Approximately 51.1 miles (86 percent) of the pipeline route described in the EIS Proposed Action would be built as described. Segments C, E and G of the described Proposed Action, which includes federal land, would be avoided by constructing the pipeline entirely in the CBW Road. The number of streams to be crossed, wildlife habitats affected and impacts to the environment would be approximately the same as described in the proposed action. However, this non-federal route would require construction of about 4 miles of additional pipeline and cost approximately \$2.3 million more. The County would be required to obtain permits from the Army Corps of Engineers (COE) and Oregon Division of State Land for crossing streams. The COE would be the lead agency for preparation of a NEPA document to address crossing of waterways and wetlands under their jurisdiction.

## Hwy 42 Alternative (the South Route)

The Hwy 42 alternative (Table 4) would supply Coos Bay, North Bend and possibly other small communities within Coos and Douglas Counties with natural gas.

**Table 4: Route Summary for Hwy 42 Alternative**

Segment	Description	ROW Type	Distance
L	Winston to Tenmile	ODOT	12.9
M	Tenmile to Camas Valley	ODOT	7.5
N	Camas Valley to County Line	ODOT	10.5
O	County Line to Powers Rd. Jct.	ODOT	24.0
P	Powers Rd. Jct. to Myrtle Point	ODOT	2.0
Q	Myrtle Point to Hwy 101 Jct.	ODOT	20.0
R	Hwy 101 Jct. to Coos City	ODOT	0.2
S	Coos City to Ocean Boulevard	BPA	5.6
<b>Total Length</b>			<b>82.7 miles</b>

Pipeline placement would be underground, under or beside the road beds. No trees would be removed, since the pipeline would be located within the highway right-of-way.

Relatively few private landowners would experience impact from construction activity. Construction equipment would be bulldozers, backhoes, side-mount cranes, etc., typically used for pipeline construction. Smaller equipment would be required in some portions, where the allowable working space is tighter.

This pipeline route would enter sensitive wildlife areas and difficult construction zones (including bedrock road beds) for a distance of about 7 miles. The difficulty would be further increased due to the fiber optic cables buried along either side of the road. Terrestrial and aquatic habitats would experience short-term disturbance, because not

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all negative effects can be minimized or avoided completely. This route would encounter 209 stream crossings and 9 wetlands. It is unlikely that visual impacts would remain after construction.

Traffic disruption would be considerable. Traffic volume along this alternative is high, as it is a major truck route to the population centers of Coos and Curry Counties. It is also a major tourist route to the Coastal region. For a period of 6 months or more, traffic would be delayed.

Pipeline capacity and throughput would be nearly identical to the proposed action. Pipeline operation and maintenance plans are expected to be similar to the description given in Appendix J.

## **Alternatives Considered But Rejected**

### **Alternative Routes Rejected Without Intensive Studies**

***Straight-line route*** - The shortest route to the Coos County natural gas delivery point (just south of Coos Bay), would be a straight-line traverse from Roseburg. However, a straight-line alternative would encounter very steep topography containing critical habitats for federally protected and special-status species. Significant impacts to the environment would likely be unavoidable, because no road or utility corridors exist along this straight-line route. This option was rejected after considering costs and environmental impacts. Also, a suitable corridor exists just a few miles to the south (the proposed action).

***Hwy 38 route*** - This route would connect with the Williams pipeline near the Hwy 38 / I-5 junction near Curtin, OR. This alternative is on the upstream side of the Winchester, OR, natural gas compressor station. This route would require a new compressor station and would be approximately 20 miles longer than the proposed action. The extra cost of this route was too high for serious consideration.

### **Alternative Sources of Natural Gas**

***Compressed Natural Gas (CNG)*** - Natural gas can be stored and shipped via truck in high-pressure gas transport cylinders. The retail cost of CNG is substantially higher than the retail cost of propane and therefore is not economically feasible for the Coos County.

***Liquefied Natural Gas (LNG)*** - Natural gas can be liquefied at cryogenic temperature (-250 degrees F). Transport and storage are both expensive and technically challenging. Because of special facilities and associated costs, this method has been limited to non-industrial uses. LNG can be shipped in ocean-going tankers and barges. The nearest LNG sources are at gas production facilities in Alaska, Australia, Indonesia and the Mideast. This alternative would require a new docking facility that may require dredging of Coos Bay. The estimated cost of facilities are more than twice the cost of Coos County's portion of the estimated cost for the proposed action. LNG costs to the consumer would likely exceed the cost of most fuels presently being utilized in Coos County. NW Natural has LNG facilities in two Oregon locations and has studied LNG for various unserved communities (like Coos Bay). NW Natural owns the distribution rights for natural gas in Coos County and has determined that LNG is not economically feasible for them in Coos Bay.

***Alternate Pipeline*** - Pacific Gas Transmission (PGT) operates an interstate pipeline system from Canada to California. The mainline runs through Bend and Klamath Falls, OR. The nearest pipeline connections would likely be at the Diamond Lake Junction northeast of Crater Lake, or at Medford, OR. A pipeline connecting to PGT would be approximately 100 miles longer than the proposed action.